

What is claimed is:

1. A transmission power control method in a radio communication system comprising a base station and mobile stations,

5            wherein a transmission power margin provided to a required transmission power to satisfy a reception error rate required for radio communication between the base station and the mobile stations, is set based on a predetermined required value for communication service  
10           quality.

2.        A transmission power control method in a radio communication system comprising a base station and mobile stations, where data retransmission is allowed in radio communication between the base station and the mobile  
15           stations,

          wherein a transmission power margin provided to a required transmission power to satisfy a reception error rate required for radio communication between the base station and the mobile stations, is set so that the  
20           transmission power margin increases as the data retransmission count in an uplink or in a downlink increases.

3.        A communication device, comprising means of determining a transmission power required for satisfying communication service quality required for radio  
25           communication with other communication devices, and means of transmitting data by allocating a radio resource based

on the determined transmission power and transmitting data using said radio resource, further comprising:

type judging means for judging a type of the communication service quality required for said radio communication;

margin setting means for setting a transmission power margin based on the judged type; and

transmission power determination means for determining a transmission power based on the set transmission power margin and said required transmission power.

4. The communication device according to Claim 3, wherein

said communication device positions in a radio communication system, where concerning a maximum allowable delay and a reception error rate as required values for the communication service quality, a first communication device group of which the maximum allowable delay is less than a predetermined reference value and the reception error rate is a predetermined reference value or more, and a second communication device group of which the maximum allowable delay is a predetermined reference value or more and the reception error rate is less than a predetermined reference value coexist, and

said margin setting means sets the transmission power margin for a communication device of the first communication

device group to be higher than the transmission power margin for a communication device of the second communication device group.

5           5.     A communication device, comprising means of determining a transmission power required for satisfying a communication service quality required for radio communication with other communication devices, and means of allocating a radio resource based on the determined transmission power and transmitting data using said radio resource, where data retransmission is allowed via said radio  
10           communication, further comprising:

          retransmission count storing means for counting a retransmission count when a same data is retransmitted and storing said retransmission count;

15           margin setting means for setting a transmission power margin so as to increase the transmission power margin as said retransmission count increases; and

          transmission power determination means for determining a transmission power based on the set  
20           transmission power margin and said required transmission power.

          6.     A communication device, comprising means of determining a transmission power required for satisfying a communication service quality required for radio  
25           communication with other communication devices, and means of transmitting data using the determined transmission power,

further comprising:

margin setting means for setting a transmission power margin based on a predetermined required value for the communication service quality required for said radio communication; and

transmission power determination means for determining a transmission power based on the set transmission power margin and said required transmission power.

10           7.     The communication device according to Claim 6, wherein said communication device positions in a radio communication system, where concerning a maximum allowable delay and a reception error rate as required values for communication service quality, a first communication device group of which the maximum allowable delay is less than a  
15           predetermined reference value and the reception error rate is a predetermined reference value or more, and a second communication device group of which the maximum allowable delay is a predetermined reference value or more and the  
20           reception error rate is less than a predetermined reference value coexist, and

          said margin setting means sets the transmission power margin to be higher than the transmission power margin of a communication device of the second communication device  
25           group when the local device itself belongs to the first communication device group, and sets the transmission power

margin to be lower than the transmission power margin of a communication device of the first communication device group when the local device itself belongs to the second communication device group.

5           8.     A radio communication system comprising a base station which comprises means of determining a transmission power required for satisfying communication service quality required for radio communication with a mobile station, and means of transmitting data by allocating a radio resource  
10     based on the determined transmission power and transmitting data using said radio resource, and a mobile station which comprises means of determining a transmission power required for satisfying a communication service quality required for radio communication with a base station, and means of  
15     transmitting data using the determined transmission power;

           the radio communication system is characterized,  
           wherein said base station further comprises:  
           type judging means for judging a type of the  
           communication service quality required for said radio  
20     communication;

           margin setting means for setting a transmission power margin based on the judged type; and

           transmission power determination means for  
           determining a transmission power based on the set  
25     transmission power margin and said required transmission power;

and wherein said mobile station further comprises:

margin setting means for setting a transmission power margin based on a predetermined required value for the communication service quality required for said radio communication; and

transmission power determination means for determining a transmission power based on the set transmission power margin and said required transmission power.

10           9.     A radio communication system comprising a base station which comprises means of determining a transmission power required for satisfying a communication service quality required for radio communication with a mobile station, and means of allocating a radio resource based on the determined transmission power and transmitting data using said radio resource, where data retransmission is allowed via said radio communication, and a mobile station which comprises means of determining a transmission power required for satisfying a communication service quality required for radio communication with a base station, and means of transmitting data using the determined transmission power, where data retransmission is allowed via said radio communication;

20           the radio communication system is characterized, wherein both said base station and said mobile station further comprise:

25           retransmission count storing means for counting a

retransmission count when a same data is retransmitted and storing said retransmission count;

margin setting means for setting a transmission power margin so as to increase the transmission power margin as said retransmission count increases; and

transmission power determination means for determining a transmission power based on the set transmission power margin and said required transmission power.

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